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[*Reprinted from the Transactions of the International Congress of Prehistoric Archæology, Third Session.*]

STONE ANTIQUITIES FOUND IN AFRICA.

Mr. George Busk, F.R.S., exhibited some stone implements from the Cape of Good Hope, and made some remarks respecting their discovery.

He stated that the larger number of the stone implements which he exhibited were sent to him by his brother, Mr. C. J. Busk, in 1867; while a smaller series had been kindly forwarded to him by Dr. Langham Dale in the present year. The latter had been accompanied by a letter from Dr. Dale, dated April 16, 1868, of which the following is an extract:—

'I have sent you a small collection of specimens of stone implements found by me, from time to time, during the last few years, on the flats near Cape Town.

'In the box you will find a few arrow-heads, spear-heads, and scrapers, a piece of native pottery, and one perforated stone. The flakes correspond with what is usually said of those found elsewhere, having a smooth underside, with a bulb at one end. I have also some stone cores, or nuclei, from which implements have been chipped, and a grain crusher; but these I have not put into the box; they shall be sent at a later opportunity.

'All the implements have been found on those portions of the great flat between Table Bay and False Bay, which lie on the north side of the main road, about two miles from the shore of Table Bay. The soil is sandy, overlying a shallow stratum of iron-stone gravel, beneath which is a considerable stratum of stiff white clay, resting on hard blue stone. Wherever the iron-stone crops up, so as to be above the reach of the shifting sand, these specimens have been found. Here and there I have noticed handfuls of splinters and bits of the cores which have been used. All the specimens are rough;

but the better shaped ones have usually been picked up, here and there one, as if they had been used and had fallen there. No doubt the shifting sands have buried quantities of them.

'Various kinds of stone, not found on the flats, have been used for chipping; I think the materials were got from the adjoining beach.'

The specimens sent by Dr. Dale consisted of seventeen implements, mostly formed of quartzite with a sugary fracture, of which six are represented in the accompanying Plate (figs. 3, 5, 6, 8, 9, 10), a piece of rude black pottery, full of particles of quartz, and a perforated stone.*

The specimens collected by Mr. C. J. Busk (figs. 1, 2, 4, 7) were from the same district, but exhibited still more polish from the effect of the shifting sands. There were also cylindrical stones like pestles (fig. 11), and rubbers or pounders (fig. 12), which it has been suggested might have been used as grain crushers. As the Hottentots are not known to have ever grown grain of any kind, it would not be easy to explain the presence of so many grain crushers. One specimen might be looked upon by some as an arrow-head, but might also have been employed in tattooing. Some of the implements had a scraper form, and might have been used in dressing skins.

Mr. Busk had received a letter from Mr. T. Baines, the well-known African traveller, of which he gave the following extract:—

'It may, perhaps, be interesting to you to receive the additional testimony of an eye-witness to the existence of these implements which, until recently, were not known to have been used in Africa, all the tribes that we know, or of which we have any record, having always used weapons pointed with iron or with bone.

'It was in 1855 that I first saw spear or arrow-heads of

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* The specimens collected by Dr. Langham Dale have been since presented to the Christy Collection, together with a selection of those collected by Mr. C. J. Busk: others have been added to the Blackmore Museum, Salisbury, and to the collection of Sir John Lubbock, Bart. In the Christy Collection are other specimens, presented by Mr. E. L. Layard; and some from Graham's Town, received from Sir Charles Lyell, Bart., and Mr. Charles Spence.—See also 'Journ. Ethn. Soc.' April 1869, p. 51.

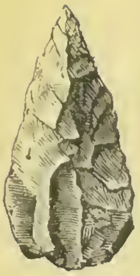
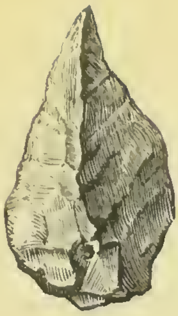


Fig. 1.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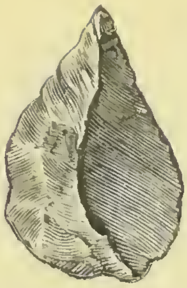
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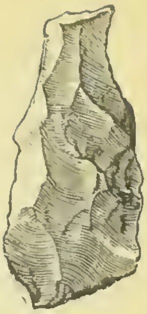
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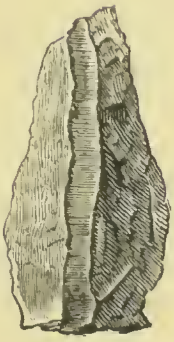
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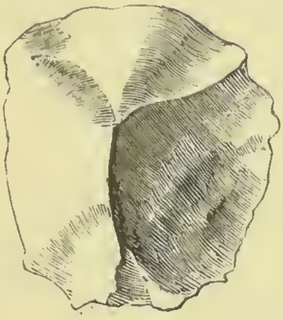
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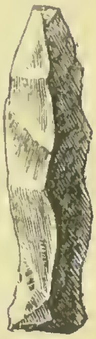
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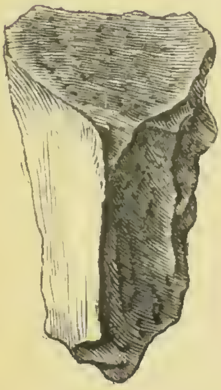
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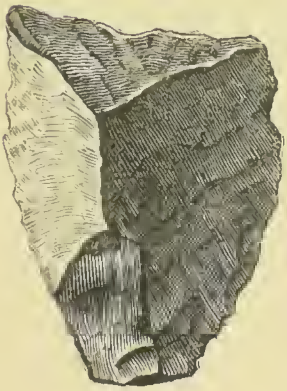
Fig. 9.

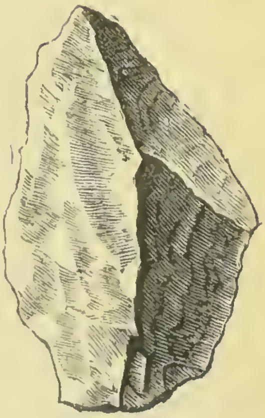
Fig. 10.

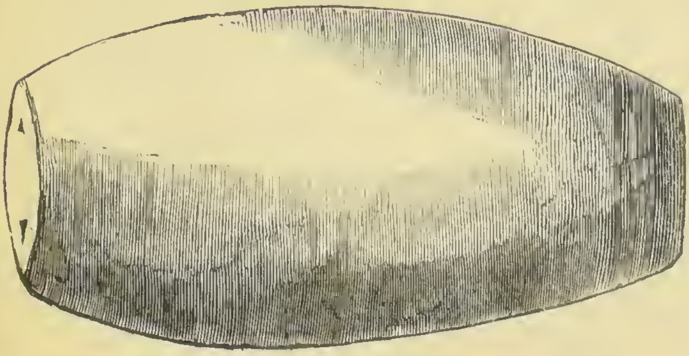
Fig. 11.

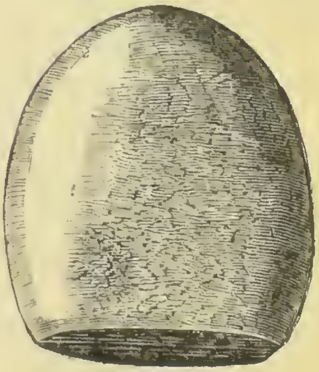
Fig. 12.

STONE IMPLEMENTS FROM THE CAPE OF GOOD HOPE (SCALE HALF LINEAR).

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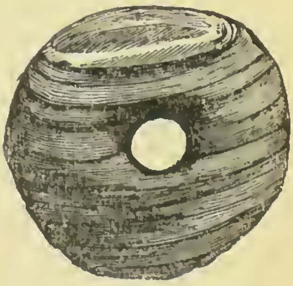
stone, which had been dug up by Mr. Bowker, near the Fish River, in the eastern province, about eighteen feet below the surface of the soil. I saw them in the possession of Mr. Edgar L. Layard, curator of the museum in Cape Town, and he kindly gave me two, one of which is now in the museum of the Anthropological Society in London, and the other in the museum of my own native town, Kings Lynn, Norfolk.'

Mr. Busk, in conclusion, called on Mr. Evans to make some remarks on the Cape implements.

Mr. EVANS said that he had not had an opportunity of carefully examining the specimens that were on the table, but he had glanced them over, and they closely resembled other specimens he had seen from the southern extremity of Africa. Similar implements had been found as far east as Graham's Town, and they presented precisely the same appearance. The majority of the specimens sent over by Dr. Dale appeared to be formed of quartzite, but there were others which he should imagine were jasper. They were of the simple form of a flake, struck off by a single blow from a block of flint, having one flat side and the other with two or more faces. Some of them might be mere splinters, but others were so symmetrically formed that they were no doubt intended to serve a certain purpose, such as for dart-heads or spear-heads. Some of the specimens would be used exactly in the condition in which they were when struck off from the block, the natural edges being sufficiently sharp for all purposes; but others had since been refashioned so as to alter the edges; and in some he noticed a curved form, and they had also been worked to a sharp edge. There was a small pierced stone in the collection, which was too small for a hammer or a digging stone, but it might possibly have been used in one of the methods of procuring fire by means of friction, as a fly wheel on a wooden spindle, that was made to revolve against a fixed piece of wood.



STONE PIERCED DISC,
(HALF LINEAR.)

With regard to the scraper to which Mr. Busk alluded, he did not regard it as one, but thought it merely an accidental form that the flake had taken on being struck off the block. Several of the small ones appeared to have been retouched at the edge, and very possibly might have been used in some cases as arrowheads. Generally speaking, there was a rudeness about these flakes which would lead one to suppose that they were in most cases merely the waste products of the manufacture. The crushing-stones, which were very coarse, appeared to have been used as grinding-stones, and not as pounding-stones, the sides having been worn away as if by friction. Even if they were not used for crushing grain, they might have been used for crushing certain roots which the inhabitants used. The pottery was curious, showing considerable knowledge on the part of the manufacturers of the art of making vessels to stand the fire, inasmuch as they had mixed with the clay, to prevent its shrinking, a considerable quantity of small fragments of quartz, as is so often the case in the pottery of the stone and bronze periods in this and other countries.

Mr. Lawson Tait drew attention to the fact that he had found weapons similar in appearance and material to those exhibited, in shell mounds on the east coast of Sutherland, on the *eleven feet beach*, which surrounds nearly the whole of Scotland in the shape of *links*. The remains were undoubtedly prehistoric, resembling in every respect those found in Denmark. It is commonly supposed that the coast of Scotland is rising at the rate of about forty inches in the century; but it is evident that, if this is the case, such remains must be of comparatively modern date; while, if the remains of a palæolithic age be, in this country, of the date to which they are usually ascribed, there can have been no such alteration of the relations of land and sea levels.

Mr. Busk stated that no remains of shells had been found with the implements in South Africa, and the only things that seemed to show that the place had once been inhabited were the remains of pottery and the pounding-stones. It was possible, however, that shells might have been there, but in such loose sand they would probably have been destroyed.

Dr. INMAN alluded to a root called *nardoo*, used by the natives of Australia. The natives collected it from plants that grew in the locality, and also from the seed. It was extremely hard and somewhat difficult of digestion, and the natives in breaking it used very similar stones to those shown by Mr. Busk.

The VICE-PRESIDENT (Mr. E. B. Tylor) said, that a few years ago Africa was considered an exceptional country as regards the use of stone implements. Prichard said that the first inhabitants of Africa must have had knowledge of iron, because there was no trace of the Stone Age there. That this idea was entirely wrong they now were aware.* Although the Hottentots might not use the implements exhibited, it was probable that they might be used by the Zulu or Kaffir races. The specimen that resembled an enormous bead, and which they would suppose was the head of a digging stick, also served another purpose. The stick was made about three or four feet long, and with a gradual taper, so that the stone might be slipped along. The stick was used as a walking-stick, or staff, on ordinary occasions, and when the head was put on it served as a club. For the purposes of digging, the weight of the stone was a great assistance. If they supposed those specimens to be Zulu remains, there could be no difficulty whatever about the grain crushers, because the Zulus were known to be users of grain; and the presence of pottery was no difficulty, because it was known that they used it. The stone in the form of a ring he thought was too small to be used for obtaining fire. Savages produce fire by twirling a wooden stick against an indentation in a piece of wood below, just as the muller is worked in producing chocolate. They continue this motion until the dust in the hole is set fire to. By more improved arrangements a string is used to facilitate the motion; and a further improvement consists in putting a heavy weight on the stick, to act as a fly-wheel. He thought there was no such instance, however, of such an instrument being used by the Kaffir or Zulu tribes, who simply make fire by twirling the stick between their hands.

Mr. EVANS, after expressing his concurrence with the views of the Vice-President, said that probably iron ore produced in some parts of Africa requires very little manipulation to render it fit for use. The Egyptians must have been brought into contact with the inhabitants of the interior of Africa at a very early time; yet among the early Egyptian remains no traces were found of iron instruments down to a comparatively modern period. It was not until the twelfth dynasty that any representation occurred that showed that iron was used in that part of the world. He could not help thinking that, if iron were known in the interior of Africa, the knowledge of its valuable properties must have been spread from those tribes who were acquainted with the manufacture; and that it must, unquestionably, have reached the knowledge of the Egyptians, who were so advanced in art. They had historical evidence of certain of the tribes of the interior of Africa not being acquainted with the use of iron in the time of Xerxes; as Herodotus mentions that certain Ethiopian tribes went to battle armed with lances tipped with bone, and with arrows that were tipped with stone. He thought, therefore, that Africa had passed through an earlier state of civilisation than that which was known as the Iron Age.

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* See also 'Early History of Mankind,' by E. B. Tylor, p. 219.

The VICE-PRESIDENT remarked that the native traditions of South Africa distinctly preserve records of a period when stone implements were in actual use.

Mr. WADDINGTON argued that in the primitive mode of manufacture of iron that existed in Africa, they could only obtain it from the best hæmatite ores, containing from 60 to 65 per cent. of iron. This ore would only be obtainable in small restricted places, and it would be interesting to know if those rich ores really existed in the part where the specimens were found.

Mr. BUSK replied that where the implements were found, iron ore of great density was also found.

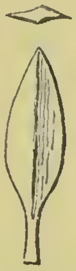
Mr. HOWORTH, in referring to the bone and stone-tipped instruments, said they were only used by the common soldiers, and that the picked men were armed with iron-tipped weapons; and that, at a date anterior to the time of Xerxes, they found the remains of bronze, stone, and iron implements, lying all jumbled together in a heap, as if they had been used by the same troops. From Sir Gardiner Wilkinson's observations it would appear that the only evidence of bronze and iron implements was to be found on the old paintings, where he considered those instruments that were painted blue to be made of steel, and those that were painted red to be made of copper.

Sir JAMES SIMPSON drew attention to the fact that mention is made in the Bible of chariots being made of iron.

Colonel A. LANE FOX, General Secretary, said, although there is now sufficient evidence to show, that in South Africa, as in other parts of the world, the use of stone for implements had preceded that of metal, yet it has been proved, by the records of the early navigators, that the art of smelting and fabricating iron had been known to the aborigines of that continent for a much longer time, and in a much earlier period of their development, than that of any other people who are in a corresponding stage of civilisation, and that the date of its introduction was anterior to the earliest records of the inhabitants by modern writers. Probably the earliest mention of the Kaffirs that we have is in a work by Magellan, lately translated for the Hakluyt Society by the Hon. Henry Stanley. This work, at the time of its publication by the society, was attributed by the translator to Duarte Barbosa; but he has since ascertained that it was probably the work of Magellan, who returned to Europe in the year 1512. He gives a general account of the east coast of Africa, and mentions the Kaffirs and the inhabitants of Madagascar as being armed, as they are at the present time, with assegais having iron points, 'very large and well wrought.' Now Magellan, if he is really the author of this work (at any rate it is a work of the date mentioned), speaks of the cultivation and weaving of cotton in this country as a recent introduction by Arab traders; and as he particularly specifies all the articles of commerce introduced by them without mentioning iron, it is evident that the use of that metal by the aborigines was not derived from that source, at least to the knowledge of persons living at the time of Magellan's voyage, at the beginning of the sixteenth century.

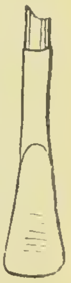
It appears to be a very reasonable supposition, that the general use of iron in Africa may have been derived from the Egyptians. Although we have no actual evidence of such having been the case, yet the contact of the Egyptians with the Ethiopians, so frequently represented in the sculptures, is sufficient to warrant us in assuming that it may have spread from that source. But, in the absence of any direct evidence on the subject, much useful information may be obtained by comparing the details of the smelting process as practised in Africa with those prevailing amongst iron workers in other countries.

It is worthy of notice, that not only throughout all those parts of Africa where iron is worked, but also amongst the hill tribes of Central Asia and the Asiatic Islands, the double bellows of skins is used to procure a continuous blast, and is worked in the same manner; and the earthen tubes for conveying the blast to the furnace are nearly identical and similarly constructed. A peculiar kind of double bellows, having a piston composed of feathers, is common to Madagascar and the Asiatic islands. Nor is this resemblance confined to the process of manufacture; the implements themselves also show a remarkable coincidence throughout these regions. As an instance of this may be mentioned the corrugated blade, the peculiarity of which consists in its being sunk upon alternate flanges, so as to produce a corrugated zigzag section. This is used alike for spear and arrow-heads, axes, and daggers, in all those parts of Africa where iron is worked, from the Kaffirs on the S.E. to the Niger and the Gaboon. The same form may also be noticed on the little spear-points attached to the battle-axes of the Khonds of Central India. Judging by a specimen of this kind of blade in the United Service Institution, it appears to be used by some tribes in the Himalayan mountains, and nearly similar forms may be seen on weapons from Borneo. Spear-heads of precisely the same construction are frequently found in Anglo-Saxon and Frankish graves, races whom we know to have been amongst the earliest employers of iron in


CORRUGATED BLADE.

Europe. This peculiar form of blade when used for javelin or arrow-heads, had the effect of giving the weapon a rotatory motion, like the feathers of an arrow, and thereby increasing the accuracy of flight; and its very wide range of employment, always in association with the most primitive use of iron, is worthy of notice when considering the sources from which the iron manufacture may have been derived, and the period at which it may have superseded the use of stone.*

Then, again, the spears having a flat spud at the butt end, have an almost equally wide distribution. The spud-ended spears of Borneo and Madagascar are so identical as to be undistinguishable in form; this might be accounted for by the known admixture of races and of language that has taken place between those countries; but this particular weapon is found all across Central Africa, from east to west, amongst the Mahomedan negro races. One of these weapons from Liberia so closely resembles the winged palstab common to the Bronze period of Europe, both in its form and in the mode of fastening it to the shaft, as to suggest a similar use for that implement. These spuds appear to answer very remarkably to the description of an instrument in Deuteronomy xxiii. 13, in which the Israelites are directed to have a *paddle* at the end of their weapon, for the purpose of digging in the ground. In the travels of Denham and Clapperton and of Barth, several instances are recorded in which the spears of the Bornouese, thus armed, are employed in digging the ground.†



IRON SPUD.

All these circumstances appear to point to a remote antiquity, and to a common origin for the iron manufacture of Asia and Africa, and lead us to hope that further researches in this direction may be the means of revealing the sources from which it was derived.

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* An Egyptian bronze arrow, or javelin head, of this form, three inches and two-tenths long, is described in 'Horæ Ferales,' page 152, Pl. VI.

† See also Chapman's 'Travels in the Interior of South Africa,' vol. ii. p. 102, where he mentions that the Makalakas have at one end of their spear shafts a piece of iron to dig up the roots of the *magoolie*.

That iron should have been the first metal employed in Africa may be accounted for by the fact, that throughout that continent, unlike most other parts of the world, iron is the most abundant and attractive metal, being found frequently in solid lumps on the surface of the ground. Nearly all African travellers concur in their accounts of the abundance of this metal. In the south-west, Mr. C. T. Anderson describes it as being found in great quantities, either in iron stone, or pure, in a crystallised state. Kolben mentions large flakes of iron on the surface near the Cape of Good Hope, and Livingstone gives a similar account of some parts of the country he traversed on the eastern coasts, and in the interior. Accounts from the Gaboon country describe it as being so plentiful there, and so visible to the eye, that the sand upon the seashore sparkles with it. Du Chaillu also confirms this by his description of the Fan iron-workers. In Kordofan Mr. Petherick speaks of a very rich oxide of iron found near the surface, containing from fifty-five to sixty per cent. of pure iron; and he says that the Djour tribe procure iron of the finest quality from the rocks upon the surface. Denham and Clapperton mention it near Mourzuk in kidney-shaped lumps upon the surface; and at Bilma, the capital of the Tibboos, they speak of nodules of iron ore in the red sandstone. Near Mandara they speak of iron as being the only metal found in the hills, and that in great abundance, but the Bornouese procure their best iron from the Soudan. Barth says that magnetic iron is found in the hills at Jinninau, south of Asiu, in the country of the Kelowi Tawarek, and also near Kuka. In the Mandingo country, Mungo Park mentions the ironstone found on the surface and used by the natives, and says that it is of a dull red colour with greyish spots; and Grant, in his 'Walk across East Central Africa,' says that the natives pick up a walnut-sized nodule of iron, covered with a rusty red dust, and in a short time turn it into a spear that glistens like steel. Mr. Warren Edwards, who was for some time in charge of the Niger expedition, had informed him that he has often seen the natives use the fragments of ironstone found upon the surface to support their earthen vessels over the fire in cooking, and that it had struck him that it was by this means they first discovered the smelting process.

From these accounts we see that Africa is essentially an iron-producing continent, and that the ore is found in situations that would be favourable to its having been employed by the natives in a very primitive condition of culture. To this cause also we may probably attribute the fact, that the inhabitants of Africa appear to have passed direct from the stone implements, described by Mr. Busk, to those of iron, without passing through the intermediate bronze period, which in other countries intervened between the ages of stone and iron.

Mr. Busk communicated the following extract from a letter of Don Antonio Machado, Dean of the Faculty of Sciences at Seville, dated July 29, 1868 :—

'If circumstances had permitted I should have hastened to join the Congress of Prehistoric Archæology, in order to aid to the utmost of my power its endeavours to learn the history of the human species ; a history far more interesting and useful than are the annals and chronologies of ancient and modern nations, which serve to convey little more than a knowledge of their passions and rivalries, their hates and their ambitions.

'We may conclude that the habitation of primitive man was in mountain caverns, and that it is in such situations that indications of the gradual development of his intelligence should be sought for, in order to enable us afterwards to investigate the traces of his advances at subsequent periods.

'Spain would afford copious data towards the harmonising of the chronology of past times ; but unfortunately we have but few amongst us willing to devote themselves to this important research. It would be tedious to enumerate all the numerous caverns which are to be found in Andalusia, and which are not less important than those of France and England.

'As instances of caverns of this description, well worthy of attention, may be cited those at St. Nicolas del Puerto, where a sort of spring or small lake, about 500 metres in circumference and twelve in depth, is surrounded with a multitude of caverns lined with stalactites, and having their entrances all directed towards this piece of water: excavations in these caves would doubtless enable us to ascertain the epoch at which they were inhabited.

'Another cavern, also well known for its vast extent and great height, is that of Santiago, situated between Cavalla and La Puebla in the triassic district near Biar. Of all these caverns I am about to publish a description.

'Had Spain been in the condition of more fortunate nations, geologists and archæologists might have been invited to visit a country in which they would assuredly meet with abundant objects of interest.

'I should have been glad of an opportunity of explaining these circumstances at a congress of men of science, in order to stimulate my indifferent countrymen to shake off their indolence, which may be attributed to the climate, together with the ignorance and fanaticism under which we have been weighed down for the last 300 years.

'I should also have wished to lay before the meeting certain questions of primary importance; that is to say, if there be in London sufficient scientific liberty and so much love of truth as to render men willing to encounter illegitimate beliefs (*creencias ilegitimas*).

'1. What is the origin of man? Is the race descended from a single pair; or did the creative force produce simultaneously numerous individuals of both sexes at different points of the globe?

'2. Is the human species a modification of other animals, effected in the course of incalculable ages, and due to the evolutions of the medium in which it has been created? Or is it derived from a single trunk, morphologically identical, or presenting only slight alterations?

'3. If man has undergone slow and progressive improvement in space and time, why is it that animals have not been subjected to the same law, as regards *their* instinctive and intellectual faculties?

'If questions such as these could be sounded at the Congress, and an approach be made towards their solution, it appears to me that this should be frankly declared in vindication of scientific truth, and in order to stem the flood of impossible and absurd notions which have invaded and perturbed the human reason. Let us study and observe.'

LONDON: PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET